The Changing Landscape of Federal Innovation: Implications for the Navy

NWDC, 6 June 2012

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Chris Fall
Innovation Fellow
chris.fall@navy.mil
www.onr.navy.mil

Revolutionary Research . . . Relevant Results

OFFICE OF NAVAL RESEARCH

Report Documentation Page

Form Approved
OMB No. 0704-0188

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1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
06 JUN 2012		**00-00-2012 to 00-00-2012**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
The Changing Landscape of Federal Innovation: Implications for the Navy	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Office of Naval Research,One Liberty Center,875 N Randolph St Ste 1425,Arlington,VA,22203-1995**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
Prsented at the Junior Leader Innovation Symposium, 6 Jun 2012, Norfolk, VA

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**33**	

What am I going to say?

- **Innovation as a strategic advantage**
- **Make you proud of ONR as an S&T Innovation Engine**
- **The rapidly changing landscape of *open* innovation across the Federal Government**
- **What might this mean for the Navy beyond S&T?**
- **Thoughts on a (window of) opportunity to lead**

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Invention vs Innovation

Invention = working to create ideas

Innovation = putting ideas to work

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Classic Innovation

Apple

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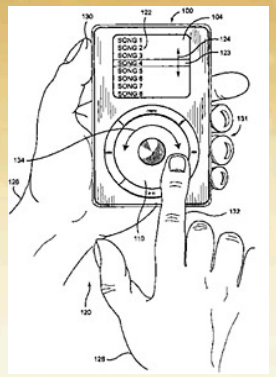
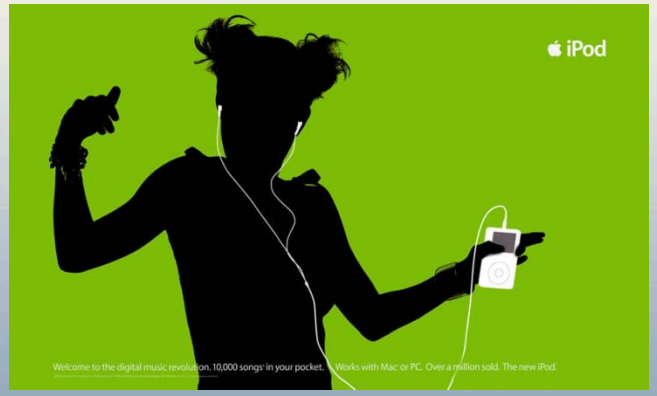
Aspects of Apple Innovation

Industrial Design



Intellectual Property



Marketing

Product Integration

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Who Invented the iPod?

A 23 year old englishman named Kane Kramer invented essential iPod along with DRM in 1979. He let his patent lapse.

The iPod internal design came from a company called PortaPlayer

The iPod interface and operating system came from a company called Pixo

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The Office of Naval Research

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The **Office of Naval Research** invests in innovative operational concepts to develop the science and technology (S&T) that ensures our warfighters always have the **technological edge**.

ONR Mission — "to plan, foster, and encourage scientific research in recognition of its paramount importance to future Naval power and national security."
- Public Law 588 of 1946

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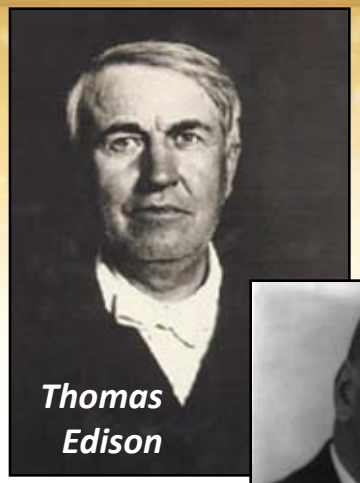
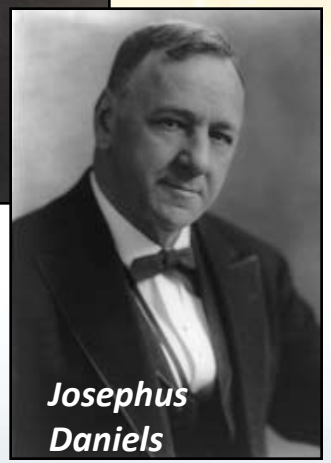
A Rich History

Naval Research Laboratory *(Appropriations Act, 1916)*

"[Conduct] exploratory and research work…necessary… for the benefit of Government service, including the construction, equipment, and operation of a laboratory…."


Thomas Edison


Josephus Daniels

Vannevar Bush

Office of Naval Research *(Public Law 588, 1946)*

"… plan, foster, and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security…. "

Harry S. Truman

Transitioning S&T *(Defense Authorization Act, 2001)*

"…manage the Navy's basic, applied, and advanced research to foster transition from science and technology to higher levels of research, development, test, and evaluation."

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The First Unmanned Air Vehicle (UAV)

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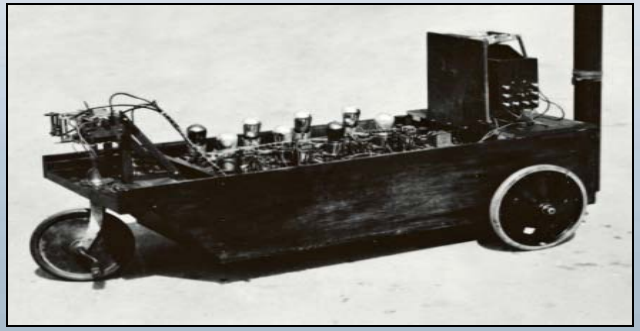
U.S Navy Curtis, 1924



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Innovative Naval Prototype (INP) Programs

- **Determined by DoN guidance, INPs are funded at ~12% of ONR Total Obligation Authority**
- **Purpose:**
  - Explore high-risk, game-changing technologies and advance the capabilities of the warfighter
  - Reduce the acquisition risk of disruptive technologies and capabilities
  - Deliver "The Next Big Thing"
- **Approved by VCNO, ASN (RDA) and ACMC**
- **FY10 Innovative Naval Prototypes:**
  - Tactical Satellite (TACSAT) launched Sept. 27
- **Current Innovative Naval Prototypes:**
  - Persistent Littoral Undersea Surveillance (PLUS)
  - Sea Base Enablers (SBE)
  - Electromagentic Railgun (EMRG)
  - Free Electron Laser (FEL)
  - Integrated Topside (INTOP)
- **FY12 Innovative Naval Prototypes:**
  - Autonomous Aerial Cargo Utility System (AACUS)
  - Large Displacement Underwater Unmanned Vehicle (LDUUV)

Free Electron Laser

Electromagnetic Railgun

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Naval S&T Investments

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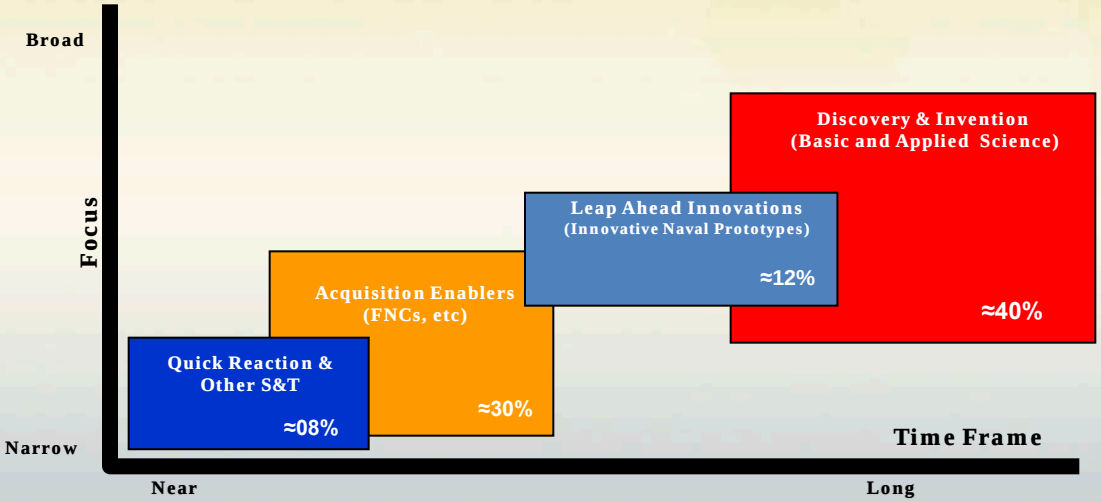

Focus Areas:

- Power and Energy
- Operational Environments
- Maritime Domain Awareness
- Asymmetric & Irregular Warfare
- Information Superiority and Communication
- Power Projection
- Assure Access and Hold at Risk
- Distributed Operations
- Naval Warfighter Performance
- Survivability and Self-Defense
- Platform Mobility
- Fleet/Force Sustainment
- Total Ownership Cost

Tech Solutions

FNCs

INPs

D&I

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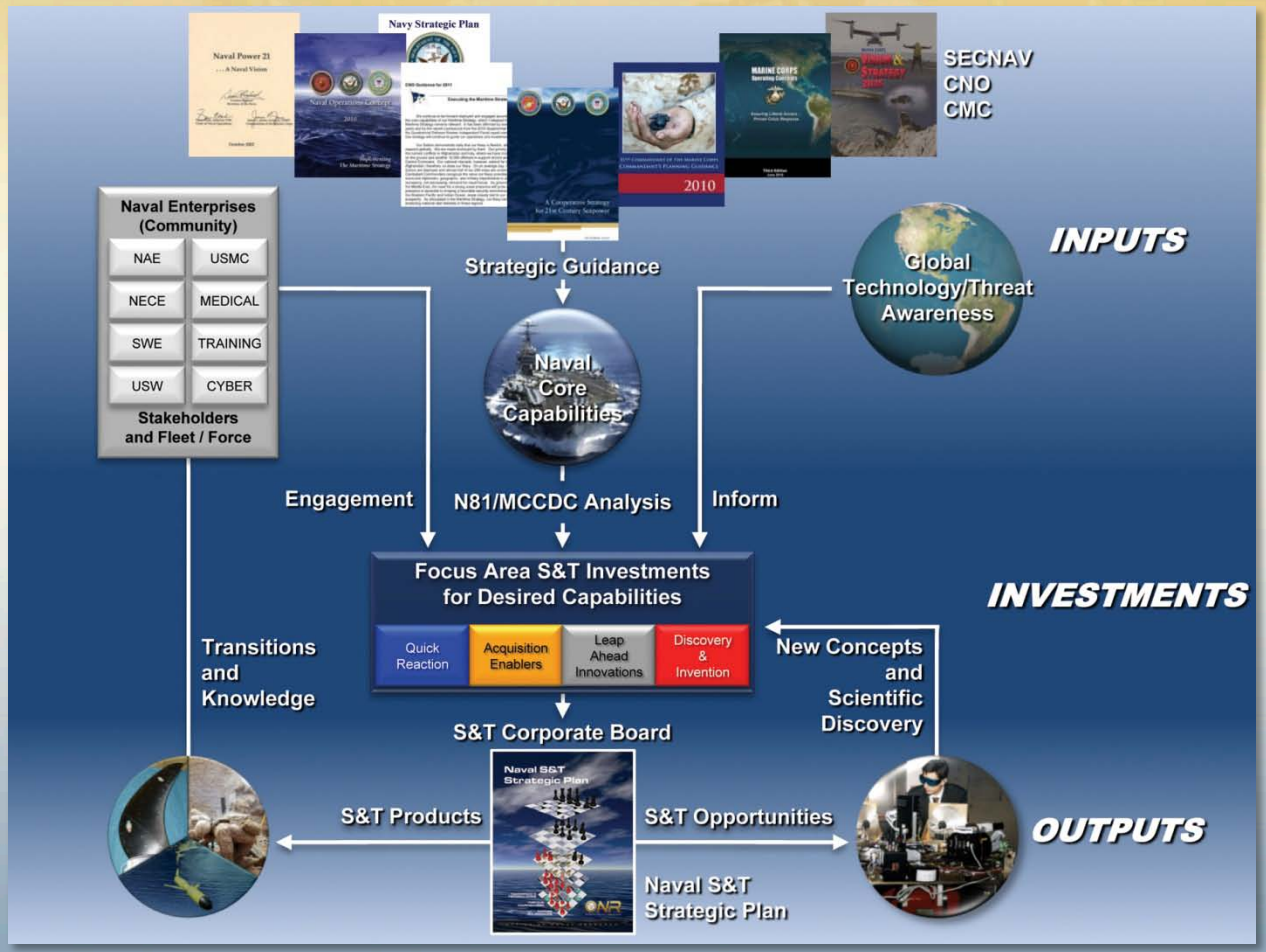
Naval S&T Strategic Process



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New Open Innovation Efforts Across the Federal Government

- Coordinated "Strategy for American Innovation" issued by White House in September 2009. America Competes Act 2011.

- Many of the innovation efforts are focused on expanding access to ideas and problem solvers:
  - **Challenges and Prizes**: Expansion of Challenge and Prize authority to all agencies of the federal government. Clearinghouse website Challenge.gov. Public private partnerships are explicitly encouraged.
  - **Outward Facing Ideation Crowdsourcing Programs**: Being used both for solicitation of ideas and for required public commentary periods for policy changes
  - **Inward Facing Ideation Crowdsourcing Programs**: Generate ideas from employees (DHS, HHS, State Department, Coast Guard)
  - **Open Government Data Sharing**: may not be appropriate for all
  - **Presidential Innovation Fellows** : Just announced

- Examples of initiatives at:
  - *http://www.whitehouse.gov/open/innovations*

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Pay only for (best) results

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Welcome to the Tec^Edge Pavilion

This pavilion is sponsored by Tec^Edge, an organization operated by the Wright Brothers Institute (WBI), in partnership with it's foundational stakeholder, the Air Force Research Laboratory (AFRL), Tec^Edge operates as a neutral enabler and environment for multidisiplinary joint teams to come together in intense collaborations, which focus on complex problems and challenges.

About the Air Force Research Laboratory:

AFRL is the Air Force's only organization wholly dedicated to leading the discovery, development, and integration of warfighting technologies for our air, space and cyberspace forces. We trace our roots to the vision of airpower pioneers who understood science as key to air supremacy. The passionate commitment of AFRL people to realize this vision has helped create the world's best air, space and cyberspace force.

External Links

→ AFRL
→ Wright Brothers Institute

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NASA NHHPC and CoECI

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Focus on Crowdsourcing Ideas

- **Periodic Topical Challenge from Leadership:**
  - Example: HHSinnovates
  - *http://www.hhs.gov/open/innovate/index.html*
- **Continuous Process** (suggestion box model):
  - Example: State Department Sounding Board
- **Mixed**: Ongoing plus Periodic Challenges
  - Example: TSA IdeaFactory
  - *http://IdeaFactory.dhs.gov*
  - **Key Innovations over the suggestion box**:
    - Online commentary from the community
    - Online voting to promote best/most popular ideas
    - Facilitated routing, SME vetting and action by leadership

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What is Idea Factory?

- IdeaFactory is a Web-based tool that empowers all TSA employees to:
  - submit ideas,
  - provide comments on how to improve new concepts, and
  - rate ideas that should be recommended for implementation
- It uses social media concepts to harness the “wisdom of the crowds” and expand upon the traditional suggestion box

IdeaFactory Vision Statement:

Support TSA’s mission by fostering a community that engages employees and encourages collaboration to initiate innovative change.

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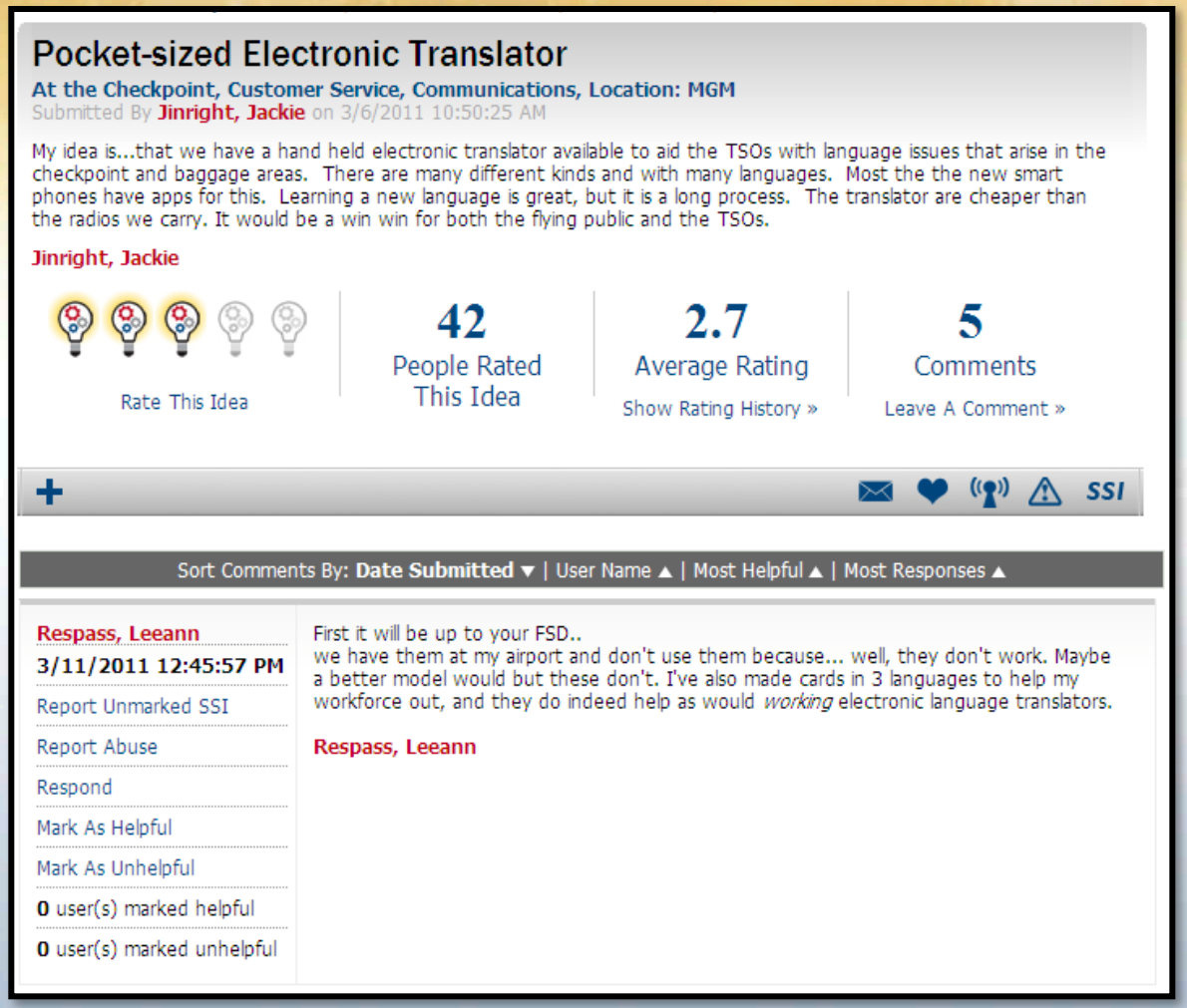
Lots of valuable experience…

- Users rate ideas on a scale of 1-5 light bulbs
- Toolbox functionality allows users to collaborate with peers and track ideas
- Reminiscent of open ideation…
- But Internal…
- Moderated…
- Vetted by SME's…
- And feedback



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… and Key Lessons Learned

- TSA IdeaFactory Team:
  - Carefully indentify the business need and idea flow process
  - Ensure senior leadership champions effort and provides support
  - Ideation management group reports directly to senior management team
  - Understand the users and their needs and cultivate the community
  - Focus mission and avoid being all things to users; not a forum for ranting
  - Transparency is key – engage employees throughout the entire idea lifecycle
  - Facilitated Ideation is a *program not a website*
  - It's OK to start small and grow
- Gartner Research
  - Do not start an ideation innovation program without CEO level support
  - Senior executive must be accountable for process
  - Best practices are evolving – benchmark and adapt based on research
  - Put most effort towards strategy, focus, process and culture….
  - *Because the technology is the simplest part.*

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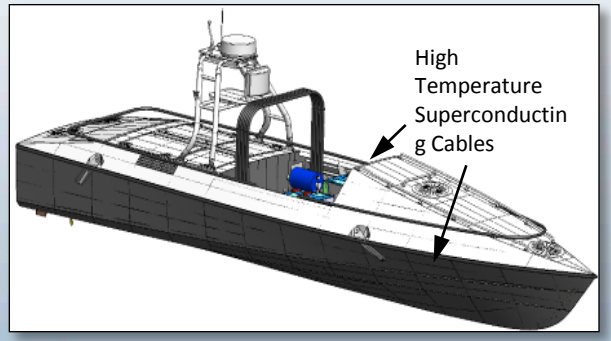
ONR SwampWorks

- **Project Parameters**:
  - Project duration < 3 years
  - Must be S&T in nature
  - Develop highly innovative, game-changing technology
- Develop and demonstrate newly invented or recently discovered technologies that address emergent and enduring operational problems in an accelerated timeframe
- Develop prototypes of recent technology breakthroughs for experimentation to satisfy Warfighter requirements
- Pilot disruptive and Open Innovation process and tools with the objective of decreasing the time and cost of producing innovative solutions

XFC Fuel Cell Powered Long Endurance UAS for ISR

Damage Control Technologies for the 21st Century (DC-21)



High Temperature Superconducting Minesweeping System

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User_19

OUR SCORE:
01190

Your Innovation Points: **00595**
Group Innovation Points: **00000**
Target: **04900** Innovation Points

mmoWgli

Leaderboard | Map | Live Blog | Learn More

PLAY AN IDEA | TAKE ACTION

MOVE 1: TURN THE TIDE

The situation:

Three pirate ships are holding the world hostage.

Chinese-US relations are strained to the limit and both countries have naval ships in the arena. Humanitarian aid for rig workers and the East African coastline is blocked. The world is blaming the US for plundering African resources.

Merchant ship movement through the area is blocked. Big cities from Mozambique to Djibouti are already feeling the economic repercussions.

Two years ago, at a Navy-sponsored event, a select group of participants set in motion dozens of innovations that could be used in game changing ways in this situation. You were part of this group. Now we need you to put those ideas to work. Help us create a rapid fire brainstorm of the best strategies in this situation.

We need your help...

PLAY A CARD NOW:

Help us identify the worst. Start now, work fast, work together.

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ONR MMOWGLI Pilot

3 days of gamplay per chapter

2000 invites **805** registered players **4484** idea cards played

24 action plans developed **200** simultaneous players

1000.mils **300**.edus **250**.govs **450**.coms

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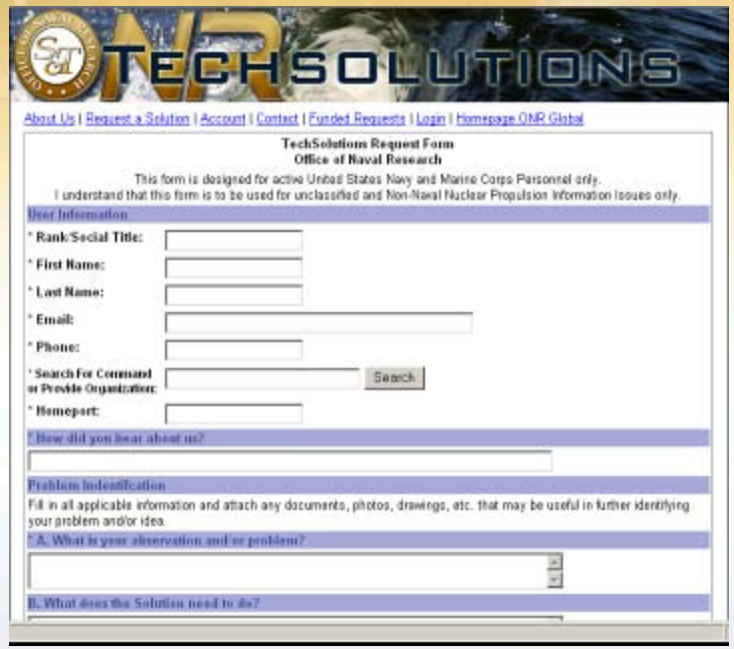
ONR Tech Solutions (HERE!)

- Develops applications of existing and emerging technologies to meet high-interest, near-term Fleet/Force needs
  - Demonstrate prototype solution within 14 months of request
  - 1 year turnaround time, off the shelf technologies
- Solutions with NRE partners and Fleet/Force feedback early and often
- Video: www.youtube.com/usnavyresearch
- Requests submitted online at:
  - www.onr.navy.mil/techsolutions



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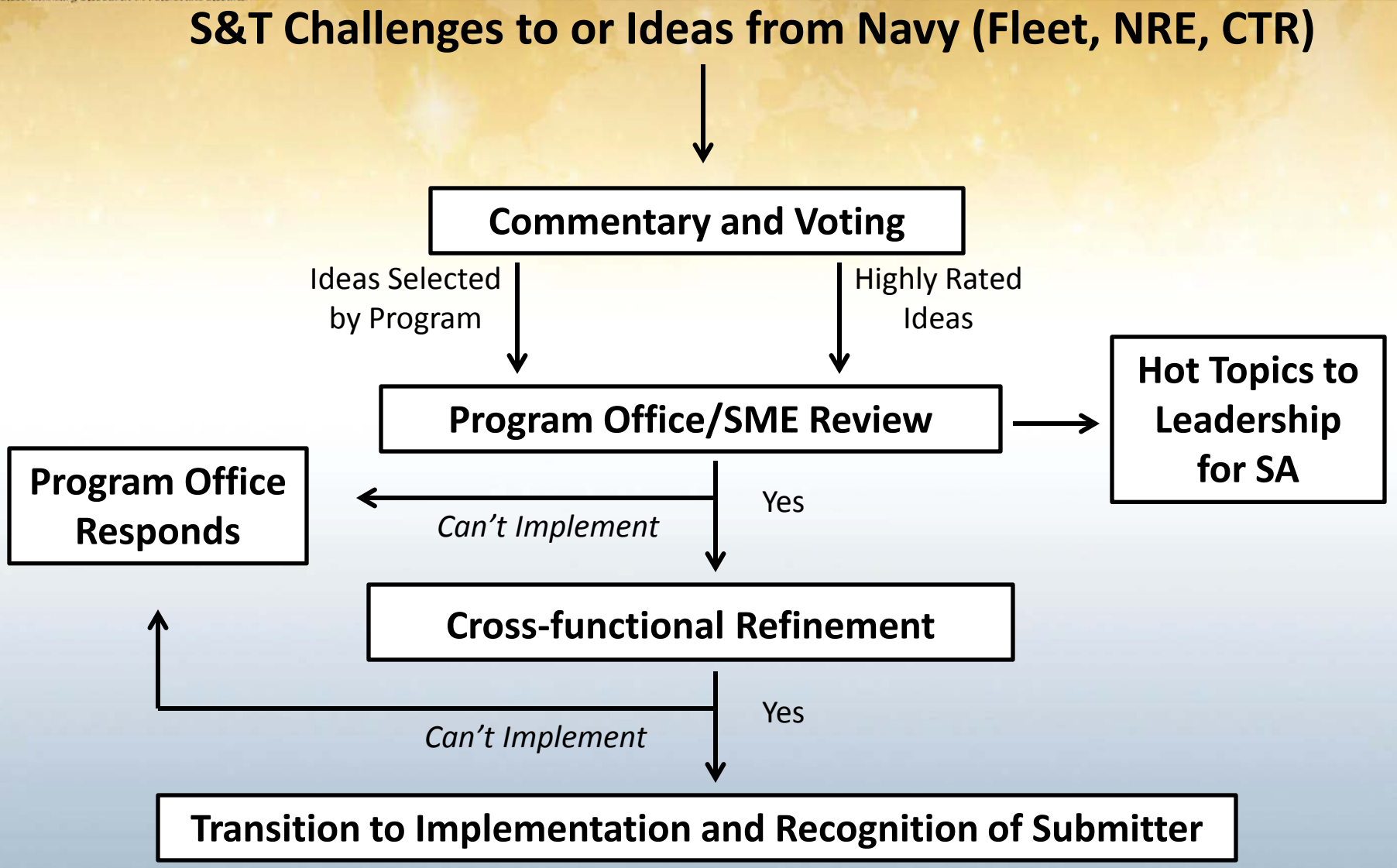
Notional ONR Ideation Program



Adapted from TSA

Notional Fleet S&T Challenge

ONR
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ICoC defines a constrained multifaceted challenge topic

CNO issues the challenge to the fleet

Software: Solutions and ideas submitted via the web

ICoC sifts out silly or redundant replies and posts ideas

Software: Ideas receive comments from the fleet

Software: solutions are sieved down using iterative voting

Best idea(s) receive an award from the CNO

Software

Existing open source government or commercial ideation software hosted by Navy.

This is something Navy should be able to do in-house and often.

Hosts:	Navy CIO Naval Postraduate School Naval War College NWDC
Examples:	IDEO's open IDEO IBM's JAMs HHS ideation suite State Department Sounding Board
Or Not:	email and people can work well

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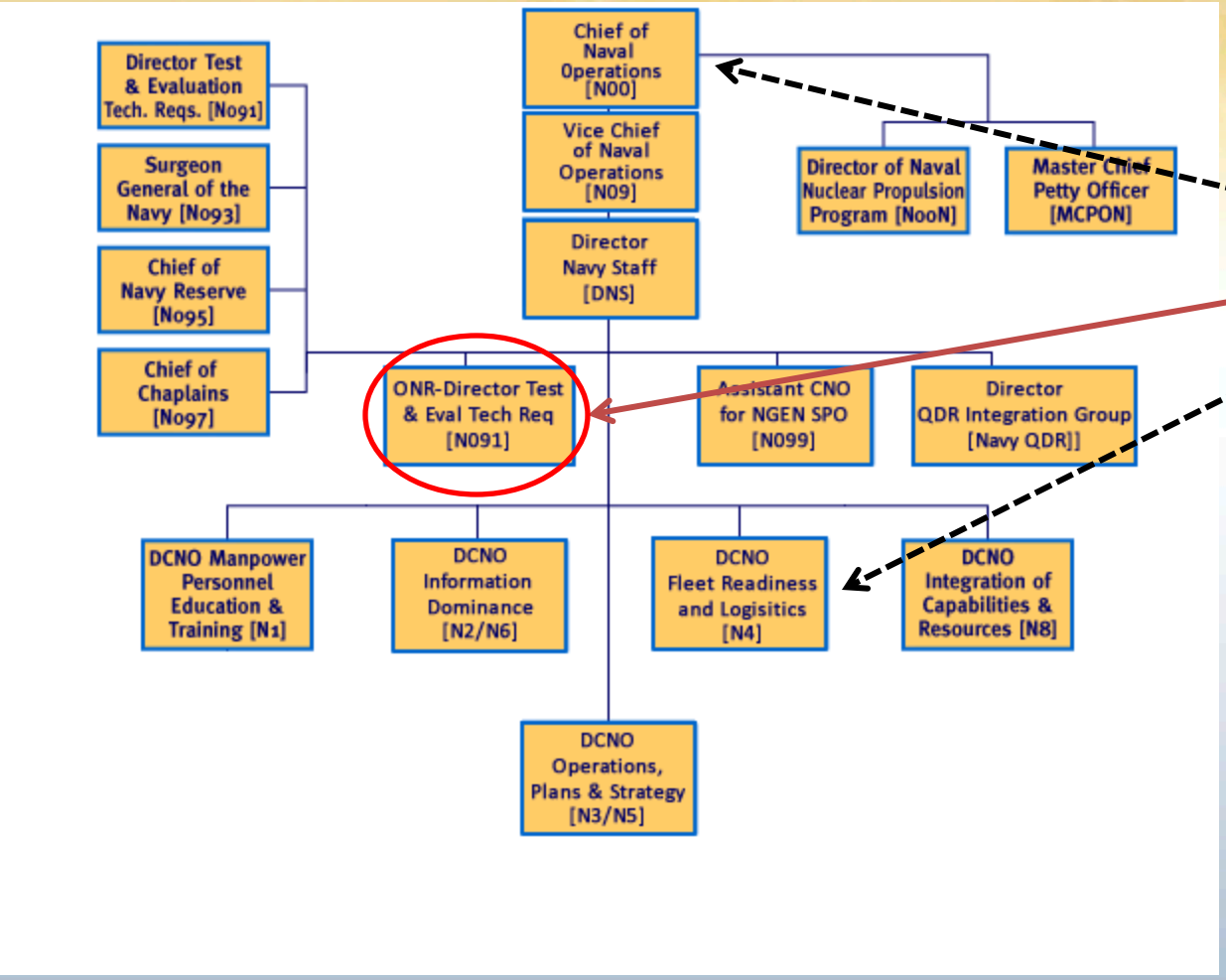
S&T is just one piece



Fleet and Friends

↕

Crowdsource Broker NWDC?

↕

Vetting
Sorting
Routing

ICoC?

Do we want iTunes or confusion?

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Lead or be Lead

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accenture

BCG
The Boston Consulting Group

BAIN & COMPANY

Booz | Allen | Hamilton

McKinsey&Company

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Take Home Thoughts

Innovation is about follow-through and is a strategic advantage

You can be proud of ONR as an innovation engine for S&T

But innovation for the warfighter is bigger than things

Federal innovation is a fast moving target that has not gelled

My *opinion* is that you have a window of opportunity to influence and protect how innovation is defined and implemented in your organization….

Diversity in innovation practice is critical but government wants a one size fits all solution

So get out in front and define it on your terms

And who is going to broker the Navy's open innovation process?

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Contact

CNR RADM Matt Klunder, Director of Innovation Dr. Larry Schuette, and the entire ONR team want to celebrate your innovation success. We are standing by to help.

Chris Fall
ONR/03I
chris.fall@navy.mil

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ONR-Global

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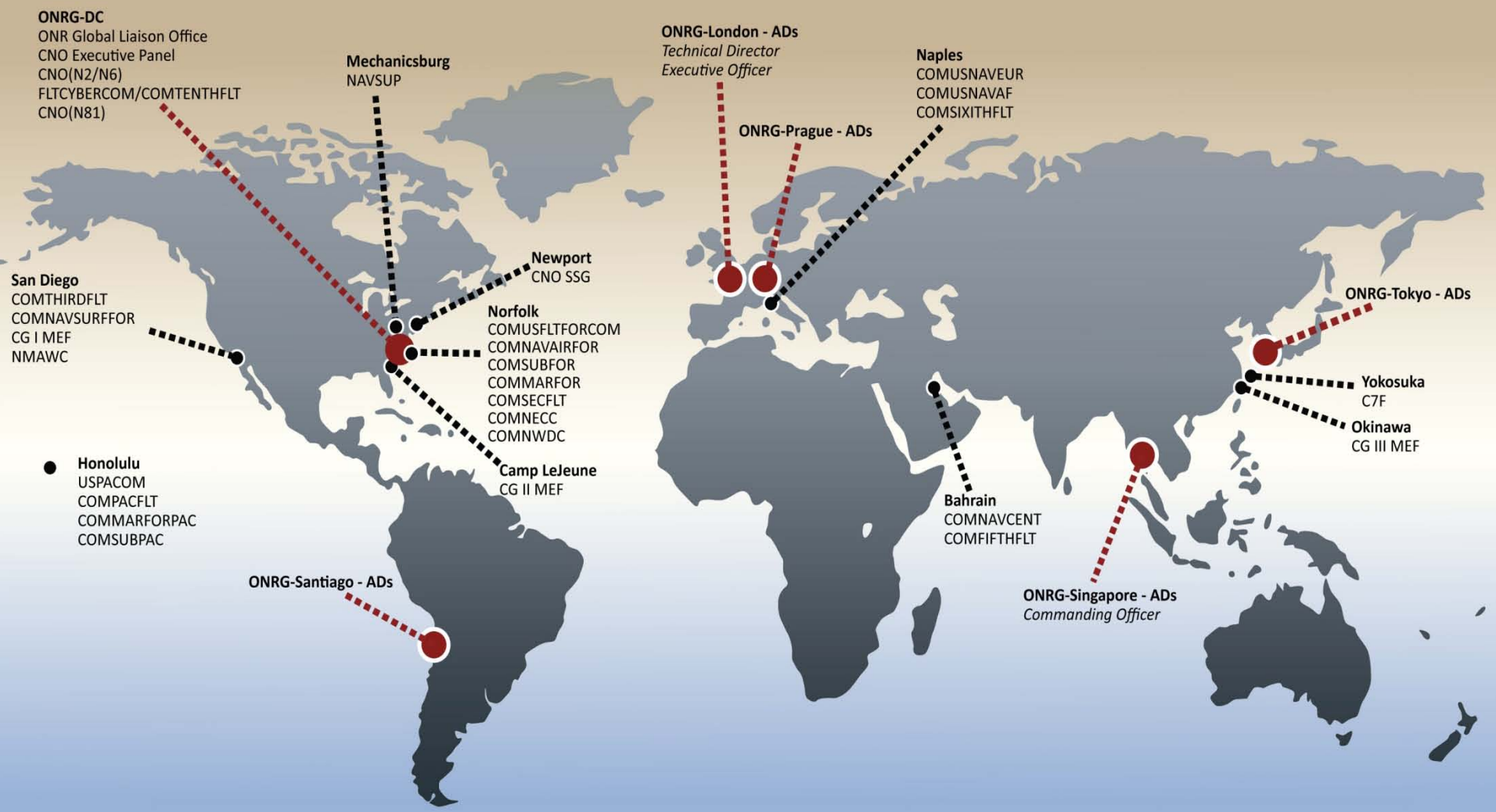

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It seems pretty easy at first

Skip to content

NATIONAL ACADEMY OF PUBLIC ADMINISTRATION®

OPEN GOVERNMENT DIALOGUE

Search Ideas | Search

Submit New Idea

Categories

All Ideas

1. Transparency
- Making Data More Accessible
- Making Government Operations More Open
- Records Management

2. Participation
- New Strategies and Techniques
- New Tools and Technologies
- Federal Advisory Committees
- Rulemaking

3. Collaboration
- Between Federal Agencies
- Between Federal, State, and Local Governments
- Public-Private Partnerships
- Do-It-Yourself Government

4. Capacity Building

How can we strengthen our democracy and promote efficiency and effectiveness by making government more transparent, participatory, and collaborative?

June 26, 2009

The Open Government Dialogue is now closed. Because of your participation, this dialogue has generated a rich collection of ideas that will shape the President's commitment to making our government more transparent, participatory, and collaborative.

This dialogue represented the first of a three-phase process that is soliciting public input in crafting recommendations on open government. Summaries of the brainstorming that has occurred here, and of subsequent phases in the process, can be found on the **White House Office of Science and Technology Policy Blog**.

Visit the **White House Open Government Initiative** website for more information.

The National Academy of Public Administration

On January 21st, the President issued the **Memorandum on Transparency and Open Government**, calling for an unprecedented level of openness in government. In the memorandum, the President outlined three principles for promoting a transparent and open government: transparency, participation, and collaboration. **Now, the President is calling on you to help shape how that commitment is fulfilled.** This online brainstorming session, open from **May 21st to 28th, 2009**, will enable the White House to hear your most important

Getting Started

Here is a discussion question to get you started:

What is the best way to change the culture of government to embrace collaboration?

While you're here:

- **Search for Ideas** to make sure that your idea or area of interest hasn't already been covered.
- **Vote, Vote, Vote!** Your votes are critical to ensuring that the best ideas "bubble up" to the top.
- **Add Your Idea** by clicking on the "New Idea" button to the left.
- **Spread the Word!** E-mail a link to this website to your network, and invite them to get involved.

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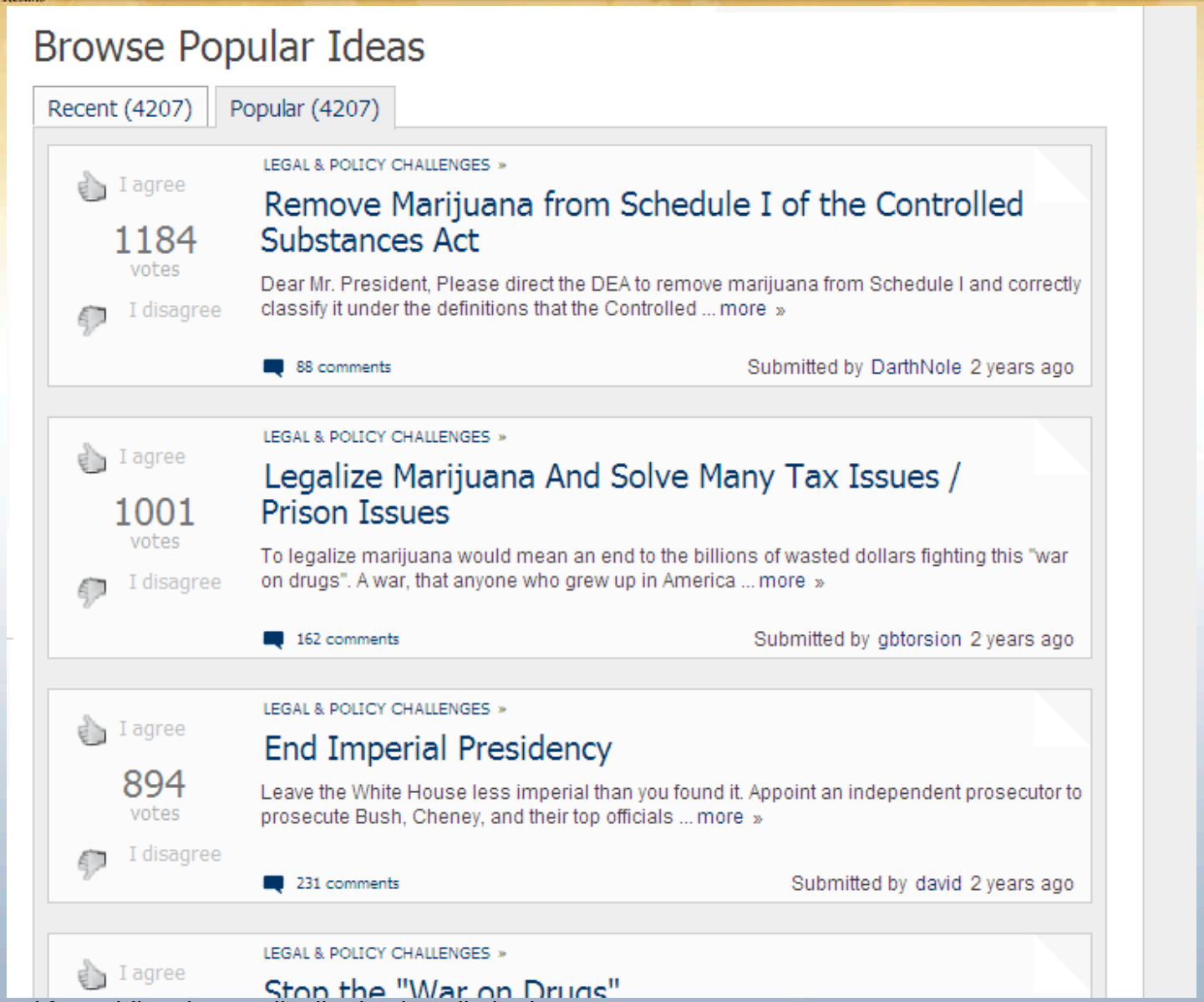
Prepare for the unintended



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